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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/802,000	03/08/2001	Herbert J. Thanner	09794829-0048	5866

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EXAMINER

GONZALEZ, JULIO C

ART UNIT PAPER NUMBER

2834

DATE MAILED: 05/06/2002

11

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	09/802,000	THANNER, HERBERT J.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Julio C. Gonzalez	2834	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 06 February 2002.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 21-41 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 21-41 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 March 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☒ The proposed drawing correction filed on 06 February 2002 is: a) ☐ approved b) ☒ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All   b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                  | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____  |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                         | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>7</u> . | 6) <input type="checkbox"/> Other: _____                                    |

## **DETAILED ACTION**

### ***Drawings***

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the first electrical contact surface and the electrical contact point of the resonator as disclosed in claim 1; the first conductive strip extending from the first excitation electrode to the lateral surface as disclosed in claim 2; the means for measuring the electrical resistance as disclosed in claim 28; the means for production and regulation of current flow as disclosed in claim 29; must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

### ***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 21-40 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 21, the claim discloses a first mounting force lying essentially in-plane with the piezoelectric resonator. What is meant by lying in-plane with the resonator?

How can a force be determined to be on the same plane as the resonator? The resonator has several planes, which plane is considered the in-plane? What is considered for a force to lie essentially?

In claim 24, how the first mounting force is directed essentially radially to a center of the resonator? How is the force determined to be directed to the center of the resonator? Is the force only applied to the center or does the force also affect the rest of the resonator?

In claim 25, the second mounting force is essentially in one plane with the resonator? Which plane is it? How and in what way is the force with the resonator?

In claim 29, what is meant by the production and regulation of current flow? Is the means for production and regulation of current flow the same device are they two different separate devices? Is the means for production of current flow a current source or is it the resonator?

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In claims 30 and 31, what is considered for the mounts to be mounted in a resilient fashion? Are there any other different ways that the mounts could be mounted on the base? How specifically and what determines the resilient fashion way?

In claim 32 and 33, what is meant by the mounting element to be made up of "an essentially" rigid part and "an essentially" elastic part? Is the mounting element fundamentally made up of a rigid part and at the same time of an elastic part? What determine the difference between the rigid part and the elastic part?

In claim 38, what is meant by a "one-piece" construction? All pieces put together to form one final piece? All pieces form integrally?

In claim 41, what is meant by a "stepped region"? Is it like the structure been form in steps? Or the structure has different levels?

In order to advance prosecution in the merits, the Prior Art will be applied as best understood by the examiner.

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 21-27, 30, 31, 33, 35 and 38-41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Purdue in view of Kemper et al.

Purdue et al discloses a resonator having a first mount 30 and second mount 31, a resonator 10, a first electrode 11 having an extending strip 15 that extends to the lateral surface whereby the first electrical contact surface contacts the electrically conductive strip when the resonator is clamped between the mounting elements (see figures 1, 3). Also, the second electrode 14 has an extending strip 16 that extends from the second electrode 14 to a lateral surface and the second electrical contact surface contacts the second electrically conductive strip (column 3, lines 4-6).

Purdue discloses inherently that the disclosed device does not uses adhesive since no mention of adhesive is found in the disclosure and the crystal is disclosed to be held by the pressure of the supports 30 and 31.

On the other hand, Kemper et al discloses explicitly for the purpose of improving the attenuation of inharmonic modes that the mounting elements can be connected mechanically to the piezoelectric substrate 22 (column 6,lines 16-19).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to design a resonator as disclosed by Purdue and to modify the invention by not using adhesive for the purpose of improving the attenuation of inharmonic modes as disclosed by Kemper et al.

6. Claims 28 is rejected under 35 U.S.C. 103(a) as being unpatentable over Purdue and Kemper et al as applied to claim 22 above, and further in view of Jeffers.

The combined piezoelectric resonator discloses all of the limitations above. However, the combined piezoelectric resonator does not disclose that the contact surfaces can be connected to a means for measuring the electrical resistance.

On the other hand, Jeffers discloses for the purpose of reducing the price of transducers and determine effectively the suitability of a piezoelectric semiconductor material that the piezoelectric device has means 23 for measuring the electrical resistance (see figure 2).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to design the combined piezoelectric resonator as disclosed above and to modify the invention by having means for measuring the electrical resistance for the purpose of reducing the price of transducers and determine effectively the suitability of a piezoelectric semiconductor material as disclosed by Jeffers.

7. Claim 29 is rejected under 35 U.S.C. 103(a) as being unpatentable over Purdue and Kempers et al as applied to claim 22 above, and further in view of Tanaka et al.

The combined piezoelectric resonator discloses all of the limitations above. However, the combined piezoelectric resonator does not disclose that the device has means for production and regulation of current flow.

On the other hand, Tanaka et al discloses for the purpose of reducing deformation to piezoelectric material that a piezoelectric resonator may have means for production and regulation of current flow (see figures 10, 5b & column 6, lines 60-66).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to design the combined piezoelectric resonator as disclosed above and to modify the invention by using a means for regulation of current flow for the purpose of reducing deformation to piezoelectric material as disclosed by Tanaka et al.

8. Claim 32 and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Purdue and Kempers et al as applied to claim 21 above, and further in view of EerNisse.

The combined piezoelectric resonator discloses all of the limitations above. However, the combined piezoelectric resonator does not disclose that the mounting elements can be made up of rigid and elastic parts.



On the other hand, EerNisse discloses for the purpose of producing less detrimental stress pattern in the crystal that the mounting elements are made up of rigid and elastic parts (see figures 4, 5).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to design the combined piezoelectric resonator as disclosed above and to modify the invention by using mounting means that can have rigid and elastic parts for the purpose of producing less detrimental stress pattern in the crystal as disclosed by EerNisse.

9. Claims 36 and 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Purdue and Kemper et al as applied to claim 21 above, and further in view of ordinary skill in the art.

The combined piezoelectric resonator discloses all of the limitations above. However, the combined piezoelectric resonator does not disclose the material of the mounting elements and the base.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to manufacture the base and the mounting elements with ceramic, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. In *re Leshin*, 125 USPQ 416.

***Response to Arguments***

10. Applicant's arguments with respect to claims 21-41 have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

11. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Julio C. Gonzalez whose telephone number is (703) 305-1563. The examiner can normally be reached on M-F (8AM-5PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nestor Ramirez can be reached on (703) 308-1371. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7722 for regular communications and (703) 305-1341 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

  
NESTOR RAMIREZ  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2800

Jcg

May 1, 2002